Environmental Profile

This LCA is calculated according to: ISO 14044, ISO 14040 and EN 15804

Ecochain v3.5.80

Product:	3052475 - WfxPVC Branch 45° BR/GD 125 SN8 3S
Unit:	1 piece
Manufacturer:	Wavin - NL - Hardenberg - Verified
Address:	J.C. Kellerlaan 3 7772 SG Hardenberg Netherlands

Wavin carries a complete PVC range of outdoor sewers. With PVC as a material, a smooth-walled, flexible and completely watertight piping system is obtained. Moreover, PVC is absolutely resistant to all substances that occur in domestic waste water. By working with a light material, large pipe lengths and plug connections, a very fast installation is guaranteed.

LCA standard:	NMD Bepalingsmethode 1.1 (2022)
Standard database:	Worldwide - Ecoinvent v 3.6 Cut-Off
Externally verified:	Yes
Issue date:	08-06-2023
End of validity:	08-06-2028
Verifier:	Martijn van Hövell - SGS Search

This LCA was evaluated according to EN15804+A2. It was concluded that the LCA complies with this standard.

The LCA background information and project dossier have been registered in the online Ecochain application in the account Wavin - NL - Hardenberg - Verified (2020). (☑ = module declared, MND = module not declared).

A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
☑	☑	☑	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	☑	☑	☑	☑

Product stage

A1 Raw material supply A2 Transport A3 Manufacturing

Construction process stage

A4 Transport gate to site
A5 Assembly / Construction installation process

Use stage

B1 Use B2 Maintenance B3 Repair B4 Replacement B5 Refurbishment
B6 Operational energy use B7 Operational water use

End-of-Life stage

C1 De-construction demolition C2 Transport C3 Waste processing
C4 Disposal

Benefits and loads beyond the system boundaries

D Reuse- Recovery- Recycling- potential

Environmental impacts and parameters

ECI = Environmental Costs Indicator [euro]; **ADPE** = Abiotic depletion potential for non-fossil resources [kg Sb-eq]; **ADPF** = Abiotic depletion potential for fossil resources [kg Sb-eq]; **GWP** = Global warming potential [kg CO2-eq]; **ODP** = Depletion potential of the stratospheric ozone layer [kg CFC-11-eq]; **POCP** = Formation potential of tropospheric ozone photochemical oxidants [kg ethene-eq]; **AP** = Acidification potential of land and water [kg SO2-eq]; **EP** = Eutrophication potential [kg PO4 3−-eq]; **HTP** = Human toxicity potential [kg 1,4-DB-eq]; **FAETP** = Freshwater aquatic ecotoxicity potential [kg 1,4-DB-eq]; **MAETP** = Marine aquatic ecotoxicity potential [kg 1,4-DB-eq]; **TETP** = Terrestrial ecotoxicity potential [kg 1,4-DB-eq]; **GWP-total** = EF EN15804+A2 Climate Change [kg CO2 eq]; **GWP-f** = EF Climate change - Fossil [kg CO2 eq]; **GWP-b** = EF EN15804+A2 Climate Change - Biogenic [kg CO2 eq]; **GWP-luluc** = EF EN15804+A2 Climate Change - Land use and LU change [kg CO2 eq]; **ODP** = EF Ozone depletion [kg CFC11 eq]; **AP** = EF Acidification [mol H+ eq]; **EP-fw** = EF Eutrophication, freshwater [kg P eq]; **EP-m** = EF Eutrophication, marine [kg N eq]; **EP-T** = EF Eutrophication, terrestrial [mol N eq]; **POCP** = EF Photochemical ozone formation [kg NMVOC eq]; **ADP-mm** = EF Resource use, minerals and metals [kg Sb eq]; **ADP-f** = EF Resource use, fossils [MJ]; **WDP** = EF Water use [m3 depriv.]; **PM** = EF Particulate matter [disease inc.]; **IR** = EF Ionising radiation [kBq U-235 eq]; **ETP-fw** = EF Ecotoxicity, freshwater [CTUe]; **HTP-c** = EF Human toxicity, cancer [CTUh]; **HTP-nc** = EF Human toxicity, non-cancer [CTUh]; **SQP** = EF Land use [Pt]; **PERE** = Use of renewable primary energy excluding renewable primary energy resources used as raw materials [MJ]; **PERM** = Use of renewable primary energy resources used as raw materials [MJ]; **PERT** = Total use of renewable primary energy resources [MJ]; **PENRE** = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials [MJ]; **PENRM** = Use of non-renewable primary energy resources used as raw materials [MJ]; **PENRT** = Total use of non-renewable primary energy resources [MJ]; **PET** = Total energy [MJ]; **SM** = Use of secondary material [kg]; **RSF** = Use of renewable secondary fuels [MJ]; **NRSF** = Use of non-renewable secondary fuels [MJ]; **FW** = Use of net fresh water [m3]; **HWD** = Hazardous waste disposed [kg]; **NHWD** = Non-hazardous waste disposed [kg]; **RWD** = Radioactive waste disposed [kg]; **CRU** = Components for re-use [kg]; **MFR** = Materials for recycling [kg]; **MER** = Materials for energy recovery [kg]; **EE** = Exported energy [MJ]; **EET** = Exported energy thermic [MJ]; **EEE** = Exported energy electric [MJ]

Statement of Confidentiality

Results

Environmental impact SBK set 1	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
ECI	euro	0.23	0	0.01	0.25	0	0.08	0	-0.12	0.21
ADPE	kg Sb-eq	1.93E-3	7.68E-7	3.30E-6	1.93E-3	7.03E-7	6.00E-6	7.84E-9	-2.31E-5	1.91E-3
ADPF	kg Sb-eq	2.63E-2	2.21E-4	5.68E-4	2.71E-2	1.98E-4	2.09E-3	1.09E-5	-1.42E-2	1.53E-2
GWP	kg CO2-eq	2.10E+0	3.01E-2	1.08E-1	2.24E+0	2.69E-2	7.60E-1	7.79E-3	-1.18E+0	1.85E+0
ODP	kg CFC-11-eq	1.07E-6	5.33E-9	8.52E-9	1.08E-6	5.00E-9	8.32E-8	2.59E-10	-5.54E-7	6.15E-7
POCP	kg ethene-eq	1.32E-3	1.81E-5	4.68E-5	1.39E-3	1.62E-5	1.68E-4	1.98E-6	-6.25E-4	9.49E-4
AP	kg SO2-eq	8.38E-3	1.32E-4	4.63E-4	8.97E-3	1.16E-4	1.21E-3	5.84E-6	-3.91E-3	6.39E-3
EP	kg PO4 3−-eq	1.05E-3	2.60E-5	5.95E-5	1.14E-3	2.32E-5	1.85E-4	2.52E-6	-5.13E-4	8.33E-4
HTP	kg 1,4-DB-eq	7.92E-1	1.27E-2	5.00E-2	8.54E-1	1.15E-2	3.25E-1	6.33E-4	-3.63E-1	8.28E-1
FAETP	kg 1,4-DB-eq	2.32E-2	3.70E-4	1.71E-3	2.53E-2	3.38E-4	5.03E-3	2.47E-4	-9.89E-3	2.10E-2
MAETP	kg 1,4-DB-eq	5.60E+1	1.33E+0	6.73E+0	6.41E+1	1.21E+0	1.67E+1	2.85E-1	-2.35E+1	5.88E+1
TETP	kg 1,4-DB-eq	5.58E-3	4.47E-5	3.72E-3	9.35E-3	4.08E-5	1.15E-3	2.02E-6	-3.28E-3	7.26E-3
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	2.17E+0	3.03E-2	1.23E-1	2.32E+0	2.72E-2	8.03E-1	9.09E-3	-1.13E+0	2.04E+0
GWP-f	kg CO2 eq	2.15E+0	3.03E-2	9.47E-2	2.28E+0	2.72E-2	7.65E-1	9.09E-3	-1.21E+0	1.87E+0
GWP-b	kg CO2 eq	1.76E-2	1.40E-5	1.95E-2	3.72E-2	1.65E-5	3.74E-2	1.10E-5	7.95E-2	1.54E-1
GWP-luluc	kg CO2 eq	2.22E-3	1.11E-5	8.99E-3	1.12E-2	9.61E-6	3.20E-4	2.26E-7	-1.32E-3	1.02E-2
ODP	kg CFC11 eq	1.06E-6	6.69E-9	1.00E-8	1.07E-6	6.26E-9	8.60E-8	3.22E-10	-5.49E-7	6.18E-7
AP	mol H+ eq	1.02E-2	1.76E-4	5.78E-4	1.09E-2	1.55E-4	1.52E-3	7.82E-6	-4.73E-3	7.87E-3
EP-fw	kg P eq	9.77E-5	3.06E-7	1.66E-6	9.97E-5	2.24E-7	1.06E-5	1.02E-8	-4.81E-5	6.24E-5
EP-m	kg N eq	1.79E-3	6.20E-5	1.36E-4	1.99E-3	5.54E-5	3.75E-4	5.31E-6	-8.42E-4	1.58E-3
EP-T	mol N eq	1.94E-2	6.83E-4	1.50E-3	2.16E-2	6.10E-4	4.13E-3	3.12E-5	-9.06E-3	1.73E-2
POCP	kg NMVOC eq	6.54E-3	1.95E-4	4.28E-4	7.17E-3	1.74E-4	1.24E-3	1.09E-5	-3.10E-3	5.50E-3
ADP-mm	kg Sb eq	1.93E-3	7.68E-7	3.30E-6	1.93E-3	7.03E-7	6.00E-6	7.84E-9	-2.31E-5	1.91E-3
ADP-f	MJ	5.60E+1	4.57E-1	1.06E+0	5.75E+1	4.17E-1	4.14E+0	2.35E-2	-2.97E+1	3.24E+1
WDP	m3 depriv.	3.30E+0	1.64E-3	8.20E-1	4.12E+0	1.28E-3	1.58E-1	1.48E-4	-1.72E+0	2.56E+0
PM	disease inc.	7.28E-8	2.72E-9	7.13E-9	8.26E-8	2.45E-9	1.91E-8	1.62E-10	-3.61E-8	6.82E-8
IR	kBq U-235 eq	1.22E-1	1.92E-3	1.68E-3	1.26E-1	1.82E-3	1.45E-2	1.08E-4	-5.66E-2	8.57E-2
ETP-fw	CTUe	6.01E+1	4.08E-1	2.46E+0	6.30E+1	3.39E-1	3.02E+1	3.33E-1	-2.18E+1	7.21E+1
HTP-c	CTUh	1.66E-9	1.32E-11	8.51E-11	1.76E-9	1.20E-11	4.65E-10	6.42E-13	-6.33E-10	1.60E-9
HTP-nc	CTUh	5.41E-8	4.46E-10	2.66E-9	5.72E-8	4.04E-10	1.08E-8	6.50E-11	-2.18E-8	4.67E-8
SQP	Pt	1.05E+1	3.97E-1	7.92E-2	1.10E+1	3.57E-1	2.59E+0	6.02E-2	-1.85E+1	-4.49E+0

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	3.31E+0	5.72E-3	5.15E+0	8.46E+0	5.98E-3	2.93E-1	8.89E-4	-4.00E+0	4.76E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	3.31E+0	5.72E-3	5.15E+0	8.46E+0	5.98E-3	2.93E-1	8.89E-4	-4.00E+0	4.76E+0
PENRE	MJ	6.01E+1	4.85E-1	1.14E+0	6.17E+1	4.43E-1	4.41E+0	2.49E-2	-3.20E+1	3.46E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	6.01E+1	4.85E-1	1.14E+0	6.17E+1	4.43E-1	4.41E+0	2.49E-2	-3.20E+1	3.46E+1
PET	MJ	6.34E+1	4.91E-1	6.29E+0	7.02E+1	4.49E-1	4.70E+0	2.58E-2	-3.60E+1	3.93E+1
SM	kg	0	0	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0
FW	m3	3.86E-2	5.57E-5	1.94E-2	5.80E-2	4.72E-5	4.37E-3	2.88E-5	-2.02E-2	4.23E-2
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	2.72E-4	1.16E-6	1.12E-6	2.75E-4	1.07E-6	6.78E-6	2.86E-8	-2.33E-5	2.59E-4
NHWD	kg	2.10E-1	2.90E-2	1.74E-3	2.41E-1	2.58E-2	1.54E-1	1.03E-1	-9.15E-2	4.33E-1
RWD	kg	1.11E-4	3.00E-6	2.08E-6	1.16E-4	2.84E-6	1.57E-5	1.53E-7	-5.03E-5	8.48E-5
CRU	kg	0	0	0	0	0	0	0	0	0
MFR	kg	0	0	0	0	0	0	0	0	0
MER	kg	0	0	0	0	0	0	0	0	0
EE	MJ	0	0	0	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0	0	0	0

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